

AMENDMENT

In the Claims:

Please add new claims 15 - 19 as follows.

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1. (Previously rewritten) A fluid flow control system for an electromagnetic pump, the control system comprising:
an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated drive signal defining an alternating current (ac) waveform to the electromagnetic drive so as to provide a predetermined pump flow rate, and wherein the drive signal is generated by a dc voltage supply.
 2. (Previously rewritten) The fluid flow control system of claim 1, wherein the pulse width modulated drive signal comprises variable mark space ratio pulses with defined repetition rates and amplitude.
 3. (Previously rewritten) The fluid flow control system of claim 1, wherein the electromagnetic drive includes at least one stator of magnetic material, at least one excitation winding for magnetically exciting the at least one stator, and a movable magnetic member connected to an actuator of the compressor.
 4. (Previously rewritten) A fluid flow control system for an electromagnetic pump, the control system comprising:
an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated drive signal to the electromagnetic drive so as to

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provide a predetermined pump flow rate, wherein the drive signal is generated by a dc voltage supply; and at least one diaphragm, wherein the electromagnetic drive is operatively associated with the at least one diaphragm to provide conversion of electrical energy to fluid flow.

5. (Previously rewritten) The fluid flow control system of claim 1, further comprising excitation windings having instantaneous current, and wherein the pulse width modulated drive signal controls the instantaneous current within the excitation windings.

6. (Previously rewritten) A fluid flow control system for an electromagnetic pump, the control system comprising:

an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated drive signal to the electromagnetic drive so as to provide a predetermined pump flow rate, wherein the drive signal is generated by a dc voltage supply, wherein the drive signal includes a mark-space ratio, and wherein the mark-space ratio of the drive signal defines over time an approximate half sine wave current waveform.

7. (Previously rewritten) The fluid flow control system of claim 1, wherein the pulse width modulated drive signal is of substantially constant amplitude.

8. (Previously rewritten) A fluid flow control system for an electromagnetic pump, the control system comprising;

an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated low voltage drive signal of substantially fixed amplitude to the electromagnetic drive, wherein the electromagnetic drive includes coils

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having alternating current, and wherein the pulse width modulated low voltage drive signal controls amplitude and repetition rate of the alternating current in the coils of the electromagnetic drive to drive an actuator of the compressor in order to generate a desired flow rate output from the compressor.

9. (Previously rewritten) A fluid flow control system for an electromagnetic pump, the control system comprising;
- an electromagnetic drive within a compressor, wherein the control system further comprises:
 - a command generator that creates a command signal corresponding to a predetermined desired fluid flow rate;
 - at least one sensor to ascertain the status of the system and provide at least one feedback signal,
 - wherein the command signal and the at least one feedback are processed by a command processor, wherein the command processor outputs a drive signal defined by a mark-space ratio, a repetition rate, and an amplitude, and wherein the drive signal controls voltage applied to compressor windings.
10. (Previously rewritten) The fluid flow control system of claim 9, wherein the at least one sensor provides feedback to the command processor regarding instantaneous coil current.
11. (Previously rewritten) The fluid flow control system of claim 9, wherein the at least one sensor provides feedback to the command processor regarding actuator displacement.

12. (Previously rewritten) The fluid flow control system of claim 9, wherein the at least one sensor provides feedback to the command processor regarding bladder system pressure.

13. (Previously rewritten) The fluid flow control system of claim 9, wherein the at least one sensor provides feedback to the command processor regarding bladder system fluid flow.

14. (Previously cancelled.)

15. (New) A fluid flow control system for an electromagnetic pump, the control system comprising;

an electromagnetic drive within a compressor, the electromagnetic drive comprising an actuator attached to a diaphragm, wherein the control system supplies a pulse width modulated drive signal to the electromagnetic drive to provide linear deflection of the actuator and resultant deflection of the diaphragm to generate a desired flow rate output from the compressor.

16. (New) The fluid flow control system of claim 15, wherein the pulse width modulated drive signal is of substantially fixed amplitude.

17. (New) The fluid flow control system of claim 15, wherein the actuator comprises a movable magnetic member and the electromagnetic drive comprises excitation windings, and wherein the deflection of the actuator is controlled by current in the excitation windings.

Q 18. (New) A fluid flow control system for an electromagnetic pump, the control system comprising:

an electromagnetic drive within a compressor, wherein the control system supplies a pulse width modulated drive signal to the electromagnetic drive so as to provide a predetermined pump flow rate, the drive signal generated by a constant voltage dc supply using a command signal representing a desired fluid flow and a feedback signal.

19. (New) The fluid control system of claim 19, wherein the feedback signal comprises at least one of a compressor coil current signal, a compressor actuator position signal, a bladder flow signal, and a bladder pressure signal.
